

SEQUENCE LISTING

<110> BOWEN, MICHAEL A.
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<120> POLYNUCLEOTIDE ENCODING AN ACTIVATED HUMAN
T-LYMPHOCYTE-DERIVED PROTEIN RELATED TO UBIQUITIN
CONJUGATING ENZYME

<130> D0034np

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<150> 60/308,706
<151> 2001-07-30

<150> 60/244,688
<151> 2000-10-30

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<170> PatentIn Ver. 2.1

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Met Gln Gln Pro Gln Pro
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Pro	Cys	Leu	Arg	Arg	Glu	Leu	Lys	Leu	Leu	Glu	Ser	Ile	Phe	His	Arg		
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Gly	His	Glu	Arg	Phe	Arg	Ile	Ala	Ser	Ala	Cys	Leu	Asp	Glu	Leu	Ser		
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Cys	Glu	Phe	Leu	Leu	Ala	Gly	Ala	Gly	Gly	Ala	Gly	Ala	Gly	Ala	Ala		
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ccc	gga	ccg	cat	ctc	ccc	cca	ccg	ggg	tgc	gtg	cct	ggg	gat	cct	gtc		822
Pro	Gly	Pro	His	Leu	Pro	Pro	Arg	Gly	Ser	Val	Pro	Gly	Asp	Pro	Val		
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cgc	atc	cac	tgc	aac	atc	acg	gag	tca	tac	cct	gct	gtg	ccc	ccc	atc		870
Arg	Ile	His	Cys	Asn	Ile	Thr	Glu	Ser	Tyr	Pro	Ala	Val	Pro	Pro	Ile		
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Trp	Ser	Val	Glu	Ser	Asp	Asp	Pro	Asn	Leu	Ala	Ala	Val	Leu	Glu	Arg		
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Asp	Val	Glu	Met	Leu	Asp	Gln	Pro	Leu	Pro	Ala	Glu	Gln	Cys	Thr	Gln		
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 Ser Gly Ser Val Gln Ala Thr Asp Arg Leu Met Lys Glu Leu Arg Asp
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 Val Asn Asp Ser Leu Tyr Asp Trp Asn Val Lys Leu Leu Lys Val Asp
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 Gly Ala Asp Phe Ile Leu Leu Asn Phe Ser Phe Lys Asp Asn Phe Pro
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 Phe Asp Pro Pro Phe Val Arg Val Val Ser Pro Val Leu Ser Gly Gly
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 Tyr Val Leu Gly Gly Gly Ala Ile Cys Met Glu Leu Leu Thr Lys Gln
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 Gly Trp Ser Ser Ala Tyr Ser Ile Glu Ser Val Ile Met Gln Ile Ser
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 gcc aca ctg gtg aag ggg aaa gca cga gtg cag ttt gga gcc aac aaa 1686
 Ala Thr Leu Val Lys Gly Lys Ala Arg Val Gln Phe Gly Ala Asn Lys
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 Ser Gln Tyr Ser Leu Thr Arg Ala Gln Gln Ser Tyr Lys Ser Leu Val
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 Gln Ile His Glu Lys Asn Gly Trp Tyr Thr Pro Pro Lys Glu Asp Gly
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35 40 45
Glu Ser Ile Phe His Arg Gly His Glu Arg Phe Arg Ile Ala Ser Ala
50 55 60
Cys Leu Asp Glu Leu Ser Cys Glu Phe Leu Leu Ala Gly Ala Gly Gly
65 70 75 80
Ala Gly Ala Gly Ala Ala Pro Gly Pro His Leu Pro Pro Arg Gly Ser
85 90 95
Val Pro Gly Asp Pro Val Arg Ile His Cys Asn Ile Thr Glu Ser Tyr
100 105 110
Pro Ala Val Pro Pro Ile Trp Ser Val Glu Ser Asp Asp Pro Asn Leu
115 120 125
Ala Ala Val Leu Glu Arg Leu Val Asp Ile Lys Lys Gly Asn Thr Leu
130 135 140
Leu Leu Gln His Leu Lys Arg Ile Ile Ser Asp Leu Cys Lys Leu Tyr
145 150 155 160
Asn Leu Pro Gln His Pro Asp Val Glu Met Leu Asp Gln Pro Leu Pro
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Ala Glu Gln Cys Thr Gln Glu Asp Val Ser Ser Glu Asp Glu Asp Glu
180 185 190
Glu Met Pro Glu Asp Thr Glu Asp Leu Asp His Tyr Glu Met Lys Glu
195 200 205
Glu Glu Pro Ala Glu Gly Lys Lys Ser Glu Asp Asp Gly Ile Gly Lys
210 215 220
Glu Asn Leu Ala Ile Leu Glu Lys Ile Lys Lys Asn Gln Arg Gln Asp
225 230 235 240

Tyr Leu Asn Gly Ala Val Ser Gly Ser Val Gln Ala Thr Asp Arg Leu
 245 250 255

Met Lys Glu Leu Arg Asp Ile Tyr Arg Ser Gln Ser Phe Lys Gly Gly
 260 265 270

Asn Tyr Ala Val Glu Leu Val Asn Asp Ser Leu Tyr Asp Trp Asn Val
 275 280 285

Lys Leu Leu Lys Val Asp Gln Asp Ser Ala Leu His Asn Asp Leu Gln
 290 295 300

Ile Leu Lys Glu Lys Glu Gly Ala Asp Phe Ile Leu Leu Asn Phe Ser
 305 310 315 320

Phe Lys Asp Asn Phe Pro Phe Asp Pro Pro Phe Val Arg Val Val Ser
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Pro Val Leu Ser Gly Gly Tyr Val Leu Gly Gly Gly Ala Ile Cys Met
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Glu Leu Leu Thr Lys Gln Gly Trp Ser Ser Ala Tyr Ser Ile Glu Ser
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Val Ile Met Gln Ile Ser Ala Thr Leu Val Lys Gly Lys Ala Arg Val
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Gln Phe Gly Ala Asn Lys Ser Gln Tyr Ser Leu Thr Arg Ala Gln Gln
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Pro Pro Lys Glu Asp Gly
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<213> Caenorhabditis elegans

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Asp Glu Leu Ser Met Lys Phe Ile Asn Ala Glu Asn Lys Gly Ile Ile
 35 40 45

Val Thr Ala Asn Ile Gln Glu Asn Tyr Pro Arg Gln Pro Pro Ile Trp
 50 55 60

Phe Ser Glu Ser Asp Asp Val Pro Val Ile Gly Met Ser Leu Gln Arg
 65 70 75 80

Leu Thr Glu Thr Glu Glu Ser Thr Asn Ile Leu His Gln Val His Arg
 85 90 95

Leu Val Ser Asp Leu Cys Ser Phe Tyr Asn Leu Gln Met Pro Cys Glu
 100 105 110

Leu Pro Gln Ile Ala Pro Pro Val Arg Asp Asp Ile Asp Glu Gly Arg
 115 120 125

Gly Ser Asp Ile Ser Asp Thr Thr Ser Glu Pro Ile Asp Asp Asp Met
 130 135 140

Ala Gly Asp Gly Glu Val Asp Asp Asp Asp Glu Glu Glu Glu Asp Asp
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Glu Asp Ala Asp Gly Asp Ile Glu Ile Val Glu Met Ala Glu Glu Asp
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Pro Thr Ser Gln His Asp Val Gly Val Ser Lys Glu Gly Leu Asp Met
 180 185 190

Leu Asp Lys Val Ser Lys Ile Asn Arg Gln Gln His Leu Asp Gly Lys
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Val Gln Gly Ser Ile Thr Ala Thr Asp Arg Leu Met Lys Glu Ile Arg
 210 215 220

Asp Ile His Arg Ser Glu His Phe Lys Asn Gly Ile Tyr Thr Phe Glu
 225 230 235 240

Leu Glu Lys Glu Glu Asn Leu Tyr Gln Trp Trp Ile Lys Leu His Lys
 245 250 255

Val Asp Glu Asp Ser Pro Leu Phe Glu Asp Met Lys Lys Leu Lys Lys
 260 265 270

Asp His Asn Gln Asp His Leu Leu Phe Ser Phe Thr Phe Asn Glu Lys
 275 280 285

Phe Pro Cys Asp Pro Pro Phe Val Arg Val Val Ala Pro His Ile Asn
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Gln Gly Phe Val Leu Gly Gly Ala Ile Cys Met Glu Leu Leu Thr
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Lys Gln Gly Trp Ser Ser Ala Tyr Ser Ile Glu Ser Cys Ile Leu Gln
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Ile Ala Ala Thr Leu Val Lys Gly Arg Ala Arg Ile Ser Phe Asp Ala
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Lys His Thr Ser Thr Tyr Ser Met Ala Arg Ala Gln Gln Ser Phe Lys
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Ser Leu Gln Gln Ile His Ala Lys Ser Gly Cys Thr Phe Leu Cys Ser
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Ser	Phe	Ser	Arg	His	Leu	His	His	Pro	Phe	Phe	Thr	Arg	Phe	Leu	Ile
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Pro	Gln	Leu	Gln	Pro	Pro	Pro	Ile	Pro	Phe	Gln	Leu	Ile	Pro	Pro	Phe
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<213> Drosophila melanogaster

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Phe Ala Glu Ser Glu Glu Thr Ser Val Thr Asn Ala Val Gln Ile Leu
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Ser Asn Thr Asn Gly Arg Asp Asn His Val Ile Asn Gln Val Gly Ile
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Leu Leu Arg Glu Leu Cys Arg Leu His Asn Val Pro Leu Pro Pro Asp
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Ile Asp Asn Leu Ala Leu Pro Leu Gln Thr Pro Pro Pro Ser Ala Ser
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Pro Leu Arg Cys Glu Gln Arg Pro Gly Gly Gly Gly Ala Gly Gly Gly
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Gly Gly Pro His Gly Asn Glu Glu Thr Asp Ser Asp Gln Glu Glu Ile
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Glu Asp Pro Ile Gly Glu Ser Glu Gln Glu Ser Glu Gly Asp Glu Asp
165 170 175

Leu Pro Leu Glu Met Asp Asp Val Arg Ser Thr Ser Lys Lys Asp Asp
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Met Glu Val Glu His Leu Ala Thr Leu Glu Lys Leu Arg Gln Ser Gln
195 200 205

Arg Gln Asp Tyr Leu Lys Gly Ser Val Ser Gly Ser Val Gln Ala Thr
210 215 220

Asp Arg Leu Met Lys Glu Leu Arg Asp Ile Tyr Arg Ser Asp Ala Phe
225 230 235 240

Lys Lys Asn Met Tyr Ser Ile Glu Leu Val Asn Glu Ser Ile Tyr Glu
245 250 255

Trp Asn Ile Arg Leu Lys Ser Val Asp Pro Asp Ser Pro Leu His Ser
260 265 270

Asp Leu Gln Met Leu Lys Glu Lys Glu Gly Lys Asp Ser Ile Leu Leu
275 280 285

Asn Ile Leu Phe Lys Glu Thr Tyr Pro Phe Glu Pro Pro Phe Val Arg
290 295 300

Val Val His Pro Ile Ile Ser Gly Gly Tyr Val Leu Ile Gly Gly Ala
305 310 315 320

Ile Cys Met Glu Leu Leu Thr Lys Gln Gly Trp Ser Ser Ala Tyr Thr
325 330 335

Val Glu Ala Val Ile Met Gln Ile Ala Ala Thr Leu Val Lys Gly Lys
340 345 350

Ala Arg Ile Gln Phe Gly Ala Thr Lys Ala Leu Thr Gln Gly Gln Tyr
355 360 365

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<213> *Mus musculus*

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Thr Lys Leu Ser Ser Lys Thr Thr Ala Lys Leu Ser Thr Ser Ala Lys
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Arg Ile Gln Lys Glu Leu Ala Glu Ile Thr Leu Asp Pro Pro Pro Asn
 65 70 75 80

Cys Ser Ala Gly Pro Pro Lys Gly Asp Asn Ile Tyr Glu Trp Arg Ser Thr
 85 90 95

Ile Leu Gly Pro Pro Gly Ser Val Tyr Glu Gly Gly Val Phe Phe Leu
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Asp Ile Thr Phe Ser Ser Asp Tyr Pro Phe Lys Pro Pro Lys Val Thr
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Phe Arg Thr Arg Ile Tyr His Cys Asn Ile Asn Ser Gln Gly Val Ile
 130 135 140

Cys Leu Asp Ile Leu Lys Asp Asn Trp Ser Pro Ala Leu Thr Ile Ser
 145 150 155 160

Lys Val Leu Leu Ser Ile Cys Ser Leu Leu Thr Asp Cys Asn Pro Ala
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Glu His Asp Arg Ile Ala Arg Gln Trp Thr Lys Arg Tyr Ala Thr
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 <213> Homo sapiens

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Thr Pro Tyr Glu Gly Gly Arg Tyr Gln Leu Glu Ile Lys Ile Pro Glu
 50 55 60

Thr Tyr Pro Phe Asn Pro Pro Lys Val Arg Phe Ile Thr Lys Ile Trp
 65 70 75 80

His Pro Asn Ile Ser Ser Val Thr Gly Ala Ile Cys Leu Asp Ile Leu
 85 90 95

Lys Asp Gln Trp Ala Ala Ala Met Thr Leu Arg Thr Val Leu Leu Ser
 100 105 110

Leu Gln Ala Leu Leu Ala Ala Ala Glu Pro Asp Asp Pro Gln Asp Ala
115 120 125

Val Val Ala Asn Gln Tyr Lys Gln Asn Pro Glu Met Phe Lys Gln Thr
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Ala Arg Leu Trp Ala His Val Tyr Ala Gly Ala Pro Val Ser Ser Pro
145 150 155 160

Glu Tyr Thr Lys Lys Ile Glu Asn Leu Cys Ala Met Gly Phe Asp Arg
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Asn	Ala	Val	Ile	Val	Ala	Leu	Ser	Ser	Lys	Ser	Trp	Asp	Val	Glu	Thr
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<213> *Drosophila melanogaster*

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35 40 45

Thr Pro Tyr Glu Gly Gly Lys Phe Val Leu Glu Ile Lys Val Pro Glu
50 55 60

Thr Tyr Pro Phe Asn Pro Pro Lys Val Arg Phe Ile Thr Arg Ile Trp
 65 70 75 80

His Pro Asn Ile Ser Ser Val Thr Gly Ala Ile Cys Leu Asp Ile Leu
85 90 95

Lys Asp Asn Trp Ala Ala Ala Met Thr Leu Arg Thr Val Leu Leu Ser
 100 105 110

Leu Gln Ala Leu Leu Ala Ala Ala Glu Pro Asp Asp Pro Gln Asp Ala
115 120 125

Val Val Ala Tyr Gln Phe Lys Asp Lys Tyr Asp Leu Phe Leu Leu Thr
 130 135 140

Ala Lys His Trp Thr Asn Ala Tyr Ala Gly Gly Pro His Thr Phe Pro
145 150 155 160

Asp Cys Asp Ser Lys Ile Gln Arg Leu Arg Asp Met Gly Ile Asp Glu
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Ala Thr Glu Gly Leu Phe Ser
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 <212> PRT
 <213> *Saccharomyces cerevisiae*

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Leu Glu Asp Asp Ser Asn Ile Phe Thr Trp Asn Ile Gly Val Met Val
 35 40 45

Leu Asn Glu Asp Ser Ile Tyr His Gly Gly Phe Phe Lys Ala Gln Met
 50 55 60

Arg Phe Pro Glu Asp Phe Pro Phe Ser Pro Pro Gln Phe Arg Phe Thr
 65 70 75 80

Pro Ala Ile Tyr His Pro Asn Val Tyr Arg Asp Gly Arg Leu Cys Ile
 85 90 95

Ser Ile Leu His Gln Ser Gly Asp Pro Met Thr Asp Glu Pro Asp Ala
 100 105 110

Glu Thr Trp Ser Pro Val Gln Thr Val Glu Ser Val Leu Ile Ser Ile
 115 120 125

Val Ser Leu Leu Glu Asp Pro Asn Ile Asn Ser Pro Ala Asn Val Asp
 130 135 140

Ala Ala Val Asp Tyr Arg Lys Asn Pro Glu Gln Tyr Lys Gln Arg Val
 145 150 155 160

Lys Met Glu Val Glu Arg Ser Lys Gln Asp Ile Pro Lys Gly Phe Ile
 165 170 175

Met Pro Thr Ser Glu Ser Ala Tyr Ile Ser Gln Ser Lys Leu Asp Glu
 180 185 190

Pro Glu Ser Asn Lys Asp Met Ala Asp Asn Phe Trp Tyr Asp Ser Asp
 195 200 205

Leu Asp Asp Asp Glu Asn Gly Ser Val Ile Leu Gln Asp Asp Asp Tyr
 210 215 220

Asp Asp Gly Asn Asn His Ile Pro Phe Glu Asp Asp Asp Val Tyr Asn
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10005500-10001

Tyr Asn Asp Asn Asp Asp Asp Glu Arg Ile Glu Phe Glu Asp Asp
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Glu Arg Val Ser Lys Lys Ile
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<223> Description of Artificial Sequence: Primer

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<223> Description of Artificial Sequence: Synthetic
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 Val Glu Ser Asp Asp Pro Asn Leu Ala Ala Val Leu Glu Arg Leu Val
 35 40 45
 Asp Ile Lys Lys Gly Asn Thr Leu Leu Leu Gln His Leu Lys Arg Ile
 50 55 60
 Ile Ser Asp Leu Cys Lys Leu Tyr Asn Leu Pro Gln His Pro Asp Val
 65 70 75 80
 Glu Met Leu Asp Gln Pro Leu Pro Ala Glu Gln Cys Thr Gln Glu Asp
 85 90 95
 Val Ser Ser Glu Asp Glu Asp Glu Glu Met Pro Glu Asp Thr Glu Asp
 100 105 110
 Leu Asp His Tyr Glu Met Lys Glu Glu Glu Pro Ala Glu Gly Lys Lys
 115 120 125
 Ser Glu Asp Asp Gly Ile Gly Lys Glu Asn Leu Ala Ile Leu Glu Lys
 130 135 140
 Ile Lys Lys Asn Gln Arg Gln Asp Tyr Leu Asn Gly Ala Val Ser Gly
 145 150 155 160
 Ser Val Gln Ala Thr Asp Arg Leu Met Lys Glu Leu Arg Asp Ile Tyr
 165 170 175
 Arg Ser Gln Ser Phe Lys Gly Gly Asn Tyr Ala Val Glu Leu Val Asn
 180 185 190
 Asp Ser Leu Tyr Asp Trp Asn Val Lys Leu Leu Lys Val Asp Gln Asp
 195 200 205
 Ser Ala Leu His Asn Asp Leu Gln Ile Leu Lys Glu Lys Glu Gly Ala
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 Asp Phe Ile Leu Leu Asn Phe Ser Phe Lys Asp Asn Phe Pro Phe Asp
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 35 40 45

Asp Ser Ala Leu His Asn Asp Leu Gln Ile Leu Lys Glu Lys Glu Gly
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Ala Asp Phe Ile Leu Leu Asn Phe Ser Phe Lys Asp Asn Phe Pro Phe
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Asp Pro Pro Phe Val Arg Val Val Ser Pro Val Leu Ser Gly Gly Tyr
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Val Leu Gly Gly Ala Ile Cys Met Glu Leu Leu Thr Lys Gln Gly
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Trp Ser Ser Ala Tyr Ser Ile Glu Ser Val Ile Met Gln Ile Ser Ala
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Thr Leu Val Lys Gly Lys Ala Arg Val Gln Phe Gly Ala Asn Lys Ser
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